

REMARKS:

Claims 1-46 are pending. No claims are amended at this time. Applicant respectfully requests entry and consideration of the following remarks.

35 U.S.C. §103 Rejections

1. Claims 1-8, 12-15, 20-24, 32, 36-39, 45 and 46 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,010,298 (“Cohn”) in view of U.S. Patent No. 6,602,041 (“Lewis”).

Claim 1 recites:

A retractable ramp system comprising:
a ramp platform;
a ramp carriage assembly for moving said ramp platform;
a motor;
a motor drive shaft;
a drive pulley connected with said motor drive shaft;
a belt in communication with said drive pulley and said ramp carriage assembly; and
a motor release assembly configured to disconnect and connect said drive pulley from said motor.

Cohn teaches a ramp assembly 20 that fits within a frame or rectangular enclosure 24 that fits underneath the chassis of a vehicle, such as a low floor bus 22. The ramp assembly 20 includes a reciprocating mechanism 26 for moving a ramp platform 28 between a fully deployed position and a fully stowed position (col. 6, lines 1-7). It is clear from the disclosure in Cohn that the reciprocating mechanism 26 and the ramp platform 28 move together with respect to the enclosure 24 when the ramp platform is moved between the deployed and stowed positions (see, e.g. col. 14 lines 9-14).

Cohn also teaches that the reciprocating mechanism 26 includes a rectangular motor plate 62, which in turn carries a motor mount 77 and an electric motor 72 (col. 7, lines 13-14 and 25-27). Thus, because the motor 72 is coupled to the reciprocating mechanism 26, the motor 72 also moves with respect to the enclosure 24 when the ramp platform is moved between the deployed and stowed positions. The motor 72 also includes a drive shaft 74 including a drive pulley 76.

Cohn further teaches that a drive belt 80 is fixed at both ends to opposite ends of the rectangular enclosure 24 which, as discussed above, is fixed to the vehicle. The drive belt 80

extends over idler pulleys 78 and under the drive pulley 76 such that “[r]otation of the drive pulley 76 causes the drive pulley 76 to move along the drive belt 80, advancing the rectangular motor plate 62 and the ramp platform 28 within the rectangular enclosure 24.” Cohn, col. 7 lines 44-50 and col. 10 lines 20-23.

Cohn does not teach or suggest, among other things, the combination of a carriage assembly for moving a ramp platform, and a belt in communication with a drive pulley connected to a motor shaft and the carriage assembly.

Rather, as discussed above, the drive belt 80 of Cohn has ends coupled to the rectangular enclosure 24, and passes under the drive pulley 76 which is mounted to the motor 72. The motor 72 is mounted to the reciprocating mechanism 26 and moves therewith relative to the enclosure 24 when the ramp platform 28 is moved between the deployed and stowed positions. The belt of Cohn is therefore not in communication with a drive pulley and a ramp carriage, but instead is in communication with the drive pulley 76 and the stationary enclosure 24.

Cohn specifically teaches away from the claimed configuration. At col. 14, lines 9-14 Cohn states that “the present invention also provides the convenient reciprocating mechanism 26 that includes an electric motor 72 that is mounted for reciprocating motion with the ramp platform 28. This design saves space, and does not require a mounting structure for a motor underneath or behind the rectangular enclosure 24.” Thus, Cohn teaches away from a configuration in which a belt communicates with a drive pulley and a ramp carriage assembly because such a configuration, if applied to the Cohn device, would result in the motor being removed from the reciprocating mechanism, thereby negating the stated advantages of Cohn’s design.

Lewis does not teach a ramp carriage assembly for moving a ramp platform at all, much less a ramp carriage assembly in communication with a belt that is also in communication with a drive pulley. Lewis teaches a vehicle flip-out ramp assembly 20. The ramp assembly 20 includes a drive assembly 22, a ramp 24, and a counter-balance assembly 28. As shown in Figs. 5 and 6, the ramp 24 is pivotally connected to the counter-balance assembly 28 by torsion tube shafts 58 and 70. The drive assembly 22 is operable to rotate the torsion tube shaft 70 which pivots the ramp 24. There is simply no structure in the device of Lewis that operates as a carriage for moving a ramp platform. As such, Lewis does not cure the deficiencies of Cohn discussed above, and the combination of these reference is insufficient to establish a *prima facie* case of obviousness under 35 U.S.C. §103.

For these and other reasons, the combination of Cohn and Lewis does not teach or suggest the subject matter of independent claim 1. Accordingly, independent claim 1 is allowable. Claims 1-8, 12-15, 20, and 45 depend from independent claim 1 and are allowable for the same and other reasons as independent claim 1.

Claim 21 recites:

A method of operating a retractable ramp system, the method comprising:
providing a ramp platform;
moving the ramp platform with a ramp carriage assembly;
powering the ramp platform with a motor having a motor drive shaft;
providing a drive pulley upon the motor drive shaft;
moving the ramp carriage assembly with a belt in communication with the drive pulley and ramp carriage assembly; and
disconnecting and connecting the drive pulley from the motor using a motor release assembly.

As discussed above with respect to claim 1, Cohn does not teach or suggest, among other things, moving the ramp carriage assembly with a belt in communication with the drive pulley and ramp carriage assembly. Cohn instead teaches moving a reciprocating mechanism with a belt in communication with a drive pulley and a stationary enclosure. There is also no motivation to modify the device of Cohn to operate in the manner recited in claim 21. For example, if the belt were modified to be in communication with the drive pulley and some portion of the reciprocating mechanism, the reciprocating mechanism would not move at all, because the motor and drive pulley are directly mounted to the reciprocating mechanism. Modifying the Cohn device to operate in the manner claimed would require, among other things, removing the motor from the reciprocating mechanism which, as discussed above, is contrary to the express teachings of Cohn (see, col. 14, lines 9-14).

Lewis does not cure the deficiencies of Cohn because, as discussed above, Lewis does not provide a ramp carriage assembly at all. Lewis provides a ramp 24 that is pivotally coupled to a counter balance assembly 28 and driven by a drive assembly 22. Because the device of Lewis does not include a ramp carriage assembly, it is impossible for Lewis to perform at least the step of moving a ramp platform with a ramp carriage assembly. As such, Lewis does not cure the deficiencies of Cohn discussed above, and the combination of these reference is insufficient to establish a *prima facie* case of obviousness under 35 U.S.C. §103.

For these and other reasons, the combination of Cohn and Lewis does not teach or suggest the subject matter of independent claim 21. Accordingly, independent claim 21 is

allowable. Claims 22-24, 32, 36-39 and 46 depend from independent claim 21 and are allowable for the same and other reasons as independent claim 21.

2. Claims 9-11 and 33-35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cohn in view of Lewis and further in view of U.S. Patent No. 3,983,584 (“Holecek”).

Claims 9-11 depend from independent claim 1, and claims 33-35 depend from independent claim 21. Claims 1 and 21 are allowable for at least the reasons discussed above. Claims 9-11 and 33-35 are therefore allowable for the same and other reasons as independent claims 1 and 21, respectively.

3. Claims 16-19, and 40-44 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cohn in view of Lewis and further in view of U.S. Patent No. 5,257,894 (“Grant”).

Claims 16-19 depend from independent claim 1, and claims 40-42 depend from independent claim 21. Claims 1 and 21 are allowable for at least the reasons discussed above. Claims 16-19 and 40-42 are therefore allowable for the same and other reasons as independent claims 1 and 21, respectively.

Claim 43 recites:

A method of deploying a retractable ramp system, the method comprising:
rotating a motor shaft;
rotating a drive pulley with the motor shaft;
moving a drive belt with the drive pulley;
deploying a ramp carriage assembly for a ramp platform with the drive belt;
pivoting the ramp platform around support bearings of the ramp carriage assembly when the ramp platform deploys beyond a predetermined point; and
dropping wheels of a ramp flap into a cutout defined in the ramp platform when the ramp platform deploys.

As conceded by the Examiner, Cohn does not teach dropping wheels of a ramp flap into a cutout defined in the ramp platform when the ramp platform deploys. The Examiner therefore relies on Grant to cure this deficiency in rejecting claim 43. Notwithstanding the fact that there is no motivation to combine Cohn and Grant, and that such a combination is in fact improper based at least in part on the fact that Cohn teaches a motor-deployed ramp while Grant teaches a manually-deployed ramp, Grant fails to cure the deficiencies of Cohn as suggested by the Examiner.

Grant teaches a manually-operated small vehicle stowable ramp system. The system includes a loading ramp 20 including a first portion 22 and a second portion 26 hingedly connected to the first portion 22 by heavy-duty piano hinges 32. When the ramp 20 is stowed, the first and second portions 22, 26 are housed within a stowing chamber 40. To deploy the ramp, the first portion 22 is completely withdrawn from the stowing chamber 40 and the second portion 26 is partially withdrawn from the stowing chamber 40. The first portion 22 is then pivoted with respect to the second portion 26 to engage the ground. With reference to Fig. 5, it appears crucial that the first portion 22 be permitted to pivot with respect to the second portion 26, and that the second portion 26 be at least partially withdrawn from the chamber 40, in order for the ramp to clear the tailgate of the vehicle in which the ramp system is installed.

Grant also teaches a floating lock plate 60 having locking brackets 66. When the ramp is stowed, the locking brackets 66 are received by locking slots 24 in the first portion 22. When the ramp is deployed, the locking brackets 66 are received by locking slots 28 in the second portion 26.

Grant does not teach or suggest the combination of pivoting a ramp platform around support bearings of a ramp carriage assembly, and dropping wheels of a ramp flap into a cutout defined in the ramp platform when the ramp platform deploys. On the contrary, Grant teaches that the locking brackets 66 are received by the first portion 22 when the ramp is stowed, and by the second portion 26 when the ramp is deployed. That is, the portion of the ramp assembly of Grant that pivots to engage the ground (the first portion 22) is not the same as the portion of the ramp assembly that receives the locking brackets 66 when the ramp is deployed (the second portion 26). Claim 43 on the other hand recites pivoting the ramp platform and dropping wheels into a cutout defined in the ramp platform when the ramp platform is deployed. Grant therefore does not teach the subject matter of claim 43.

Furthermore, it would not be obvious for one of ordinary skill in the art to modify Grant to achieve the subject matter of claim 43, nor is there any suggestion or motivation to do so. As shown in Fig. 5, the device of Grant is configured for use with a pickup truck having a tail gate. If the locking brackets 66 were received by the first portion 22, it would be impossible for the first portion to pivot to engage the ground because it would be supported by the tail gate. Similarly, if the locking plate 60 were modified to extend beyond the tailgate, such that the locking brackets 60 could be received by slots in the first portion 22, it would be impossible to close the tail gate when the ramp system was stowed. Either way, modification of the Grant device in such a manner would render the ramp system useless or result in other, highly

undesirable consequences. Grant therefore teaches away from the configuration of claim 43. Because Grant does not cure the deficiencies of Cohn and Lewis, the combination of these reference is insufficient to establish a *prima facie* case of obviousness under 35 U.S.C. §103.

For these and other reasons, the combination of Cohn, Lewis and Grant does not teach or suggest the subject matter of independent claim 43. Accordingly, independent claim 43 is allowable.

Claim 44 recites:

a method of stowing a retractable ramp system, the method comprising:
rotating a motor shaft;
rotating a drive pulley with the motor shaft;
moving a drive belt with the drive pulley;
stowing a ramp carriage assembly for a ramp platform with the drive belt;
pivoting the ramp platform around support bearings of the ramp carriage assembly;
rotating a ramp flap into a horizontal position with a force provided by brackets connected with wheels connected with an underside of the ramp flap; and
translating the ramp flap wheels along the ramp platform.

As conceded by the Examiner, Cohn does not teach wheels connected with an underside of a ramp flap. The Examiner therefore relies on Grant to cure this deficiency in rejecting claim 43. Notwithstanding the fact that there is no motivation to combine Cohn and Grant, and that such a combination is in fact improper based at least in part on the fact that Cohn teaches a motor-deployed ramp while Grant teaches a manually-deployed ramp, Grant fails to cure the deficiencies of Cohn as suggested by the Examiner.

In addition to the features of Grant discussed above, col. 7 lines 2-7 of Grant states “[i]n use, a single person can remove the loading ramp 20 from the stowing chamber 40 by lifting the floating lock plate 60 until the locking bracket 66 is removed from the locking slot 24 and then sliding the loading ramp 20 from the chamber 40.” This is the only discussion in the disclosure of Grant regarding removal of the locking bracket 66 from the locking slot. Presumably, the same process, manual lifting, is used to remove the locking bracket 66 from the locking slot 28 when the loading ramp 20 is being stowed.

As such, Grant does not teach or suggest rotating a ramp flap into a horizontal position with a force provided by brackets connected with wheels connected with an underside of the ramp flap as recited by claim 44. On the contrary, Grant teaches that any force applied to the lock plate is applied manually, by lifting. Because Grant does not cure the deficiencies of Cohn

and Lewis, the combination of these reference is insufficient to establish a *prima facie* case of obviousness under 35 U.S.C. §103.

For these and other reasons, the combination of Cohn, Lewis and Grant does not teach or suggest the subject matter of independent claim 44. Accordingly, independent claim 44 is allowable.


4. Claims 25-31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cohn in view of Lewis and further in view of U.S. Patent No. 1,024,580 ("Hunter").

Claims 25-31 depend from independent claim 21, which is allowable for at least the reasons discussed above. Claims 25-31 are therefore allowable for the same and other reasons as independent claim 21.

CONCLUSION:

In view of the foregoing, allowance of Claims 1-46 is respectfully requested. The undersigned is available for telephone consultation during normal business hours.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Martin L. Stern", with a long horizontal flourish extending to the right.

Martin L. Stern
Reg. No. 28,911

Docket No. 016743-9002
Michael Best & Friedrich LLP
Two Prudential Plaza
180 North Stetson Avenue, Suite 2000
Chicago, Illinois 60601
(312) 222-0800